



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER OF PATENTS AND TRADEMARKS  
Washington, D.C. 20231  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/847,909	05/02/2001	Marten S. Callicott	GT-4684 (GC-EU-CIP-DIV)	9015

7590

04/02/2003

Robert F. Rywalski, Esq.  
OMNOVA Solutions Inc.  
175 Ghent Road  
Fairlawn, OH 44333-3300

EXAMINER

FLETCHER III, WILLIAM P

ART UNIT

PAPER NUMBER

1762

7

DATE MAILED: 04/02/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application N .

09/847,909

Applicant(s)

CALLICOTT ET AL.

Examiner

William Phillip Fletcher III

Art Unit

1762

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 02 May 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 10-18 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 10-18 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 3-6. 6) ☐ Other:

***Detailed Office Action***

**I. Form & Content of Application**

5

**Response to Amendment**

Applicant's preliminary amendment (Paper No. 2) cancelled claims 1-9 and 19-26. To clarify the record at this point in the prosecution, claims 10-18 are pending of which claim 10 is independent.

10

**IDS**

The information disclosure statements (IDS) submitted on 02 May 2001 (Paper No. 3), 17 January 2002 (Paper No. 4), 14 June 2002 (Paper No. 5), and 03 March 2003 (Paper No. 6), are in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure  
15 statements are being considered by the examiner. Initialed, signed, and dated copies of the respective PTO forms 1449 are attached to this Office action.

**Title**

The title of the invention is not descriptive. A new title is required that is clearly  
20 indicative of the invention to which the *claims* are directed.

The following title is suggested: METHOD OF PRODUCING AN EASILY-CLEANABLE POLYMER LAMINATE.

Abstract

The abstract of the disclosure is objected to because it describes the product, without referring to the method to which the claims are directed. Correction is required. See MPEP  
5 § 608.01(b).

The following helpful information is provided to assist applicant in drafting a new abstract:

Applicant is reminded of the proper content of an abstract of the disclosure.

10 A patent abstract is a concise statement of the technical disclosure of the patent and should include that which is new in the art to which the invention pertains. If the patent is of a basic nature, the entire technical disclosure may be new in the art, and the abstract should be directed to the entire disclosure. If the patent is in the nature of an improvement in an old  
15 apparatus, process, product, or composition, the abstract should include the technical disclosure of the improvement. In certain patents, particularly those for compounds and compositions, wherein the process for making and/or the use thereof are not obvious, the abstract should set forth a process for making and/or use thereof. If the new technical disclosure involves modifications or alternatives, the abstract should mention by way of example the preferred modification or  
20 alternative.

The abstract should not refer to purported merits or speculative applications of the invention and should not compare the invention with the prior art.

25 Where applicable, the abstract should include the following:

- (1) if a machine or apparatus, its organization and operation;
- (2) if an article, its method of making;
- (3) if a chemical compound, its identity and use;
- (4) if a mixture, its ingredients;
- (5) if a process, the steps.

Extensive mechanical and design details of apparatus should not be given.

35 Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

40

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

5    Specification

The disclosure is objected to because of the following informalities:

- The cross-reference to related applications should be updated to reflect that application 09/244,711 has issued as U.S. Patent No. 6,423,418 B1 on 23 July 2002.

10

- At p. 7, line 20, "atomos" should, apparently, read "atoms."

Appropriate correction is required.

15    **II.    Rejections under 35 U.S.C. § 112, 2<sup>nd</sup> Paragraph**

The following is a quotation of the second paragraph of 35 U.S.C. § 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

20

1.    **Claims 10-18** are rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

25

Claim 10 recites “the method” at p. 10, l. 25. There is insufficient antecedent basis for this limitation in the claim.

Claim 10 recites “...a) one amino resin cross-linking agent...”. It is unclear whether this  
5 limitation refers to a cross-linking agent that cross-links an amino resin or a cross-linking agent that is an amino resin. For the purpose of evaluating and applying prior art, the examiner favors the latter interpretation.

Claim 10 recites “...or combinations of a), b), and c)...”. Since the claim only refers to  
10 b1) and b2), it is unclear to what “b)” refers. Is it meant to be inclusive of both b1) and b2), either b1) or b2), or something else entirely?

Claim 11 recites “...wherein said R<sub>f</sub> of said repeat units is individually on said repeat  
units a perfluorinated alkyl having from 1 to 20 carbon atoms.” It is unclear just what is meant  
15 by “individually on” and exactly what the nature of such an “individual” association might be.

Claim 17 recites “A method according to claim 15, of forming a wall covering.” This claim is indefinite because it is unclear how the wall covering formed is related to the other active steps of the method.

Claim 18 recites "A method according to claim 15, of forming a wall covering." This claim is indefinite because it is unclear how the wall covering formed is related to the other active steps of the method.

5     **III. Rejections under 35 U.S.C. § 102**

The following is a quotation of the appropriate paragraphs of 35 U.S.C. § 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

- 10     (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

- 15     **2. Claims 10, 11, and 13 are rejected under 35 U.S.C. § 102(b) as being anticipated by Hargis et al. (US 5,674,951; hereinafter "Hargis").**

20     With respect to claims 10 and 11, Hargis teaches a method comprising applying to a substrate a layer of a catalyzed mixture of at least one amino resin cross-linking agent, a reactive polyester resin, and a hydroxyl-terminated polymer including repeat units from an oxetane having a pendant  $\text{—CH}_2\text{—O—(CH}_2)_n\text{—R}_f$  group; and subsequently heating said mixture from about 80°C to about 255°C, desirably from about 160°C to about 250°C, and preferably from about 170°C to about 230°C for a period of time sufficient to cure and cross-link the layer, thereby providing a cross-linked layer [abstract; c. 1, l. 1 - c. 4, l. 14; c. 6, ll. 13 - 34].

$R_f$  is a highly fluorinated and optionally halogenated (e.g. where halogen is I, Cl, or Br) linear or branched alkyl or isoalkyl, wherein the alkyl has from 1 to 20 carbon atoms, or is an oxaperfluorinated polyether having from 4 to 60 carbon atoms. "Highly fluorinated" refers to the  $R_f$  portion of the alkyl having the hydrogen atoms on the carbon atoms predominantly replaced by fluorine atoms such that at least 50 percent of said hydrogens are replaced, desirably at least 75 percent, and preferably at least 80, 90, or 100 percent are replaced by fluorine [c. 2, ll. 3 - 13]. Further, n is from 1 to 5 [c. 2, l. 1].

With respect to claim 13, Hargis further teaches that substrates include elastomers, plastics, metals, woods, and other construction materials [c. 7, ll. 6-10].

#### IV. Rejections under 35 U.S.C. § 103

The following is a quotation of 35 U.S.C. § 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. § 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor



and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. § 102(e), (f) or (g) prior art under 35 U.S.C. § 103(a).

5     **3. Claims 10 - 17** are rejected under 35 U.S.C. § 103(a) as being unpatentable over Pate et al. (US 4,603,074; hereinafter "Pate") in view of Hargis et al. (US 5,674,951; hereinafter "Hargis") and Heilmann et al. (US 4,931,582; hereinafter "Heilmann").

Pate teaches a method comprising coating a plasticized vinyl chloride polymer layer with  
10     an outer, adherent, durable, and stain-resistant layer [abstract]. This layer comprises the cross-linked reaction product of a reactive polyester and an amino resin cross-linking agent [abstract]. The vinyl chloride layer may be supported by a fabric backing and be printed and/or embossed to yield a decorative product suitable for use as a wall covering [abstract; c. 2, l. 61 - c. 3, l. 30; and c. 4, ll. 43 - 49]. The reactive polyester-amino resin is catalyzed and applied to the substrate at a  
15     temperature of at least 200°F to cause curing or cross-linking [c. 3, ll. 31 - 46].

Pate does not teach the particular hydroxyl-terminated polymer including repeat units from an oxetane having pendant  $\text{—CH}_2\text{—O—(CH}_2\text{)}_n\text{—R}_f$  group claimed by applicant.

As detailed in rejection 2 above, Hargis teaches such a polymer as part of a reactive polyester-amino resin coating composition applied to a substrate. The resulting cross-linked  
20     coated layer possesses low surface energy, low friction, and high abrasion-resistance [c. 1, ll. 41 - 43; c. 2, ll. 54 - 55; and c. 6, ll. 35 - 37]. While Hargis teaches the specific example of such a coating on an EPDM substrate (intended for use in an automotive glass run channel), it is clear

that the invention is not limited thereto: a variety of substrates may be used and the resulting products will have the above-mentioned surface properties [c. 1, ll. 11 - 22 and c. 7, ll. 8 - 27].

Pate and Hargis both teach reactive polyester-amino resin coatings applied to polymeric substrates. Both teach that these coatings are applied and cross-linked, under similar conditions, to yield layers with advantageous physical properties. In the case of Pate, the layer is durable and stain-resistant. In the case of Hargis, the layer is low in surface energy and friction, as well as highly abrasion-resistant.

Heilmann is cited to show that, in relation to coatings of fluorinated polymers, low surface energy correlates to stain-resistance [c. 1, ll. 16 - 19]. One of ordinary skill would have expected the coating of Hargis to possess stain-resistant properties as well.

Consequently, it would have been obvious to one of ordinary skill in the art, at the time the invention was made, to modify the method of Pate so as to coat, as the over-coating layer, the composition of Hargis. One of ordinary skill in the art would have been motivated to do so by the desire and expectation of yielding a decorative, stain-resistant product — suitable for use as a wall covering — that is low in surface energy and friction, as well as highly abrasion-resistant.

4. **Claim 18** is rejected under 35 U.S.C. § 103(a) as being unpatentable over Pate et al. (US 4,603,074; hereinafter “Pate”) in view of Hargis et al. (US 5,674,951; hereinafter “Hargis”) and Heilmann et al. (US 4,931,582; hereinafter “Heilmann”), as applied to claim 11 above, in further view of Barnwell et al. (US 3,922,457; hereinafter “Barnwell”).

The combined teaching of Pate, Hargis, and Heilmann is detailed in rejection 3 above. None of these references explicitly teaches forming a dry erase surface.

Barnwell teaches, generally, that fluorocarbon coatings are commonly used to form dry erase surfaces [c. 1]. Based on this teaching, it is the examiner's position that, absent clear and convincing showings or evidence to the contrary, the stain-resistant, low surface energy, low friction, fluorocarbon coating of Pate, in view of Hargis, and Heilmann is capable of being used as a dry erase surface.

5  
10  
**5. Claims 12 and 14 - 17** are rejected under 35 U.S.C. § 103(a) as being unpatentable over Hargis et al. (US 5,674,951; hereinafter "Hargis") as applied to claim 10 above, and further in view of Pate et al. (US 4,603,074; hereinafter "Pate") and Heilmann et al. (US 4,931,582; hereinafter "Heilmann").

15 The teachings of both Hargis and Pate are detailed above. Although Hargis provides the specific example of such a coating on an EPDM substrate, intended for use in an automotive glass run channel, it is clear that the invention is not limited thereto, that a variety of substrates may be used, and that the resulting products will have low surface energies, low friction properties, and abrasion-resistant properties. [c. 1, ll. 11 - 22 and c. 7, ll. 8 - 27].

20 Hargis does not teach: with respect to claim 12, that, prior to applying the layer to the substrate, the substrate is printed at least one time; with respect to claim 14, that, prior to applying the layer to the substrate, the substrate is printed and embossed; with respect to claim 15, that the substrate includes a layer of plasticized vinyl chloride polymer; with respect to claim

16, that the vinyl chloride polymer is coated onto a fabric or backing; or, with respect to claim 17, that the method forms a wall covering.

Pate teaches a method of coating a plasticized vinyl chloride polymer laminate with an outer, adherent, durable, stain-resistant layer [abstract]. The layer comprises the cross-linked  
5 reaction product of a reactive polyester and an amino resin cross-linking agent [abstract]. The plasticized vinyl chloride polymer can be supported by or have a backing such as fabric [abstract; c. 2, l. 61 - c. 3, l. 30; and c. 4, ll. 43 - 49]. The vinyl chloride layer may be printed and/or embossed before the outer layer is applied to yield a decorative product [abstract]. The stain resistant laminates of Pate are particularly useful as wall coverings [c. 4, ll. 43 - 49].

10 Pate and Hargis both teach reactive polyester-amino resin coatings applied to polymeric substrates. Both teach that these coatings are applied and cross-linked, under similar conditions, to yield layers with advantageous physical properties. In the case of Pate, the layer is durable and stain-resistant. In the case of Hargis, the layer is low in surface energy and friction, as well as highly abrasion-resistant.

15 Heilmann is cited to show that, in relation to coatings of fluorinated polymers, low surface energy correlates to stain-resistance [c. 1, ll. 16 - 19]. One of ordinary skill would have expected the coating of Hargis to possess stain-resistant properties as well.

Consequently, it would have been obvious to one of ordinary skill in the art, at the time the invention was made, to modify the method of Hargis so as to utilize, as the substrate, the  
20 substrate of Hargis. One of ordinary skill in the art would have been motivated to do so by the desire and expectation of yielding a decorative, stain-resistant product — suitable for use as a wall covering — that is low in surface energy and friction, as well as highly abrasion-resistant.

6. **Claim 18** is rejected under 35 U.S.C. § 103(a) as being unpatentable over Hargis et al. (US 5,674,951; hereinafter “Hargis”), as applied to claim 11 above, in further view of Barnwell et al. (US 3,922,457; hereinafter “Barnwell”).

5

The teaching of Hargis is detailed in rejection 3 above. This reference does not explicitly teach forming a dry erase surface.

Barnwell teaches, generally, that fluorocarbon coatings are commonly used to form dry erase surfaces [c. 1]. Based on this teaching, it is the examiner's position that, absent clear and  
10 convincing showings or evidence to the contrary, the stain-resistant, low surface energy, low friction, fluorocarbon coating of Hargis is capable of being used as a dry erase surface (i.e., has dry erase properties).

## V. Conclusion

15

Any inquiry concerning this communication or earlier communications from the examiner should be directed to William Phillip Fletcher III whose telephone number is (703) 308-7956. The examiner can normally be reached on Monday through Friday, 9 AM to 5 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's  
20 supervisor, Shrive P. Beck can be reached on (703) 308-2333. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9310 for regular communications and (703) 872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

William Phillip Fletcher III  
Patent Examiner  
United States Patent & Trademark Office  
Group Art Unit 1762

5    *wpf*  
March 28, 2003

10



SHRIVE P. BECK  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 1700